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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,586	09/22/2003	Palanisamy Arjunan	2002B170	9631
23455	7590	04/05/2006	EXAMINER	
<b>EXXONMOBIL CHEMICAL COMPANY</b> 5200 BAYWAY DRIVE P.O. BOX 2149 BAYTOWN, TX 77522-2149				RABAGO, ROBERTO
		ART UNIT		PAPER NUMBER
		1713		

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/667,586	ARJUNAN ET AL.
	Examiner Roberto Rábago	Art Unit 1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 January 2006.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 30-41 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-29 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, claims 1-29 in the reply filed on 1/13/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Objections***

2. Claim 3 is objected to because it no longer ends with a period.

### ***Claim Rejections - 35 USC § 112***

3. Claims 10, 13, 14 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) 10, 13 and 17 are indefinite because they are not within the scope of the parent claims. Claim 1 has been amended to require 2,4-substituion on each of two indenyl rings; in contrast, claims 10 and 13 are wholly outside the scope of claim 1, and claim 17 includes additional metallocene structures not within the scope of claim 1.

(b) In claim 14 of the response filed 1/13/2006, in the ninth species listed on page 29, a ring location of "31" is not understood.

***Claim Rejections - 35 USC § 103***

4. Claims 1-9, 11, 12 and 15-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andtsjo et al. (US 6,084,041) in view of Fritze et al. (US 6,124,231).  
Andtsjo Examples 22 and 24 disclose supercritical polymerization of propylene at 94°C and 48 bar using metallocene catalyst, apparently using MAO as activator, including all limitations of at least claims 1-4, 7, 8, 11, 17, 20, 24-26 and 29 except for the use of the of metallocenes specified in claims 1 and 15. The reference example has used an unsubstituted bridged bis-indenyl metallocene, while the claims require a 2,4-substituted bis-indenyl metallocene. Andtsjo has disclosed that a broad scope of common metallocenes is suitable for use in the process (col. 5, lines 45-54), but has highlighted bis-indenyl metallocene structure by its use in the working examples. Fritze discloses a lengthy list of bridged bisindenyl zirconocenes substituted at the 2,4 position (col. 5-18, example 14). One of ordinary skill in the art would be motivated to use a variety of analogous metallocenes which are similar in structure to at least those specifically shown in the working examples, such as those disclosed in Fritze, because Andtsjo has stated that a broad array of metallocenes is useful in the disclosed process and has highlighted bis-indenyl structures.

Regarding the claimed activators, Andtsjo suggests ionic activators at col. 5, line 53, and those of ordinary skill in the art are well aware that such activators correspond primarily to conventional bulky borates (see Fritze col. 20-22, example 14). Also recommended in Andtsjo are pressures of 50-70 bar (col. 3, lines 52-55), comonomers (col. 5, lines 59-63), hydrogen (col. 5, line 55), ionic activator (col. 5, line 53), and loop

reactors (col. 2, lines 60-64; furthermore, a loop reactor is inherently "tubular"). One of ordinary skill in the art would be motivated to use these alternative embodiments because patentee has suggested them as useful.

5. Applicant's arguments filed 1/13/2006 have been fully considered but they are not persuasive. Applicants argue that the unpredictability of the art would preclude a selection of any of the metallocenes of Fritze for use in the method of Andtsjo. The Andtsjo reference is directed to the use of propylene polymerization catalysts, including metallocene catalysts, under supercritical reaction conditions for the purpose of achieving higher conversions (col. 2, lines 31-53). Andtsjo has stated that metallocenes are useful, more specifically bis-Cp Ti and Zr species (col. 5, lines 45-54), even more specifically bridged bisindenyl zirconocenes (Examples 22 and 24). While it is true that certain aspects of the catalytic polymerization art are unpredictable, it is not true that those of ordinary skill are operating in the dark regarding use of analogous species in polymerization processes. The reference clearly intends that the disclosed method be used with metallocenes in addition to the particular names species, and the rejection is based upon the premise that similar metallocenes with minor variations having the same core structure as the most highly preferred disclosed metallocenes would be obvious variations. There is no reason to believe that the use of similar metallocenes (such as those of Fritze) would meet with failure in the process of Andtsjo. Furthermore, the ordinary level of skill in the catalytic polymerization art is exceedingly high, and it would be well within said ordinary skill level to use analogous metallocenes

such as those of Fritze in the method of Andtsjo, with reasonable success expected. Regarding applicants' allegation of unexpected results, it is noted that applicants' examples do not make comparison with the metallocenes of Andtsjo. Contrary to applicants' remarks, the reference metallocenes are not substituted at the 2-position. However, even if the same metallocenes had been used, the results from the tiny scope of methods demonstrated in applicants' specification cannot be extrapolated to cover the enormous scope of metallocenes and process conditions covered by the claims.

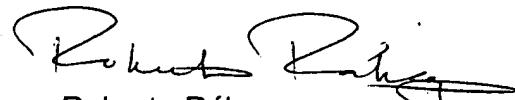
6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roberto Rábago  
Primary Examiner  
Art Unit 1713

RR  
March 31, 2006